

TMDL Delisting Commentary

Sample Collection and Analysis

As part of the Louisiana Department of Environmental Quality (LDEQ) ambient water monitoring program, samples were collected monthly by LDEQ and were compiled onto data sheets. The data was entered into a FOCUS database on the central computer by the Planning & Assessment Section of the Office of Environmental Assessment, LDEQ. The Louisiana Water Quality Standards define eight designated uses for surface waters: primary contact recreation (PCR), secondary contact recreation (SCR), fish and wildlife propagation (FWP), drinking water supply (DWS), shellfish propagation (SFP), agriculture (AGR), outstanding natural resource (ONR), and limited aquatic and wildlife use (LAW). Each water body was evaluated as fully supporting, partially supporting, or not supporting of each of its designated use(s), using the decision process shown in Table 3.2.1. Support for each designated use was defined by its poorest performing (most severely impaired) parameter, where more than one parameter defines a designated use. Criteria for each water body subsegment and designated use(s) are listed in LAC 33:IX.1123. EPA Region 6 staff compared numerical data for each water body to the pre-established criteria or guideline for each listed parameter to determine designated use support. The following is an excerpt from Louisiana's 2000 *Water Quality Inventory* which describes the process for evaluating use support.

Chapter 2: Assessment Methodology and Summary Data

Assessment Methodology

Sampling and assessment for this report focused on water bodies in four watershed basins and 21 state-wide long-term sites. In an effort to obtain more detailed information on the quality of Louisiana waters, each of the twelve watershed basins of Louisiana are being sampled more extensively than in the past, but less often. Pertinently, detailed information will be available on each watershed basin every five years, with the current rotation culminating in December 2002. This rotating basin approach addresses the problem of an insufficient amount of information on many of the state's water bodies, and the consequent gaps in earlier summary reports. Assessment information on the eight basins not sampled extensively during this rotation was carried over from the previous (1998) 305(b) report. For more information on LDEQ's new surface water quality monitoring program please see Part 3, Chapter 1.

Table 3.2.1

Decision process for evaluating use support, showing measured parameters for each designated use. Louisiana's 2000 305(b) report.

Designated Use	Measured Parameter	Support Classification for Measured Parameter		
		Fully Supporting	Partially	Not Supporting
Primary Contact Recreation (PCR)	Fecal coliform ¹	0-25% do not meet criteria	-	>25% do not meet criteria
	Temperature	0-30% do not meet criteria	>30-75% do not meet criteria	>75% do not meet criteria
Secondary Contact Recreation (SCR)	Fecal coliform ¹	0-25% do not meet criteria	-	>25 % do not meet criteria
Fish and Wildlife Propagation (FWP)	Dissolved oxygen ²	0-10% do not meet minimum of 3.0 ppm and median > criteria of 5.0 ppm	-	>10% do not meet minimum of 3.0 ppm or median < criteria of 5.0 ppm
	Dissolved oxygen ³	0-10% do not meet criteria	>10-25% do not meet criteria	>25% do not meet criteria
	Temperature, pH, chloride, sulfate, TDS	0-30% do not meet criteria	>30-75% do not meet criteria	>75% do not meet criteria
Drinking Water Source (DWS)	Color, Fecal coliform	0-30% do not meet criteria	>30-75% do not meet criteria	>75% do not meet criteria
Outstanding Natural Resource (ONR)	Turbidity	0-10% do not meet criteria	>10-25% do not meet criteria	>25% do not meet criteria
Agriculture (AGR)	None	-	-	-
Oyster Production (SFP)	Fecal coliform ¹	0-25% do not meet criteria	-	>25% do not meet criteria
Limited Aquatic and Wildlife (LAW)	None	-	-	-
1. For most water bodies, criteria is as follows: PCR, 400 colonies/100 mL; SCR, 2,000 colonies/100 mL; DWS, 2,000 colonies/100 mL, SFP, 43 colonies/100 mL (see LAC 33:IX.1123). 2. Water bodies without a special study to establish specific criteria for D.O. 3. Water bodies for which a special study has been conducted to establish criteria for D.O.				

Numerical data collected over the past five years was compiled, if available. For many sampling sites, however, (e.g. new sites, added for more extensive sampling), only 6 months to 1 year of data was available at report time. At least five samples per parameter were required for the data to be counted. The numerical data collected depended on designated use(s) for each water body, and could include any and/or all of dissolved oxygen, temperature, high and low pH, turbidity, fecal coliform bacteria, chloride, sulfate, total dissolved solids, and metals. Toxics and organic/inorganic compound data were not utilized in this analytical process. However, this type of information was considered in the assessments. Similarly, numerical criteria for nutrients and turbidity (for many

water bodies) have not been established, and therefore, with the exception of turbidity in support of ONR, were not considered.

Water Quality Standards

TURBIDITY - The Louisiana 1998 303(d) list contains waterbodies due to turbidity concerns. These assessments were based largely on the best professional judgement of LDEQ regional coordinators in these basins. In order to confirm or reject the presence of these suspected causes, LDEQ Assessment Unit staff of the Planning and Assessment Section evaluated waterbodies for which numerical turbidity “guidelines” were available. These guideline values are promulgated values from the Louisiana Water Quality Standards, §1113.B.9. The turbidity guideline given at LAC 33:IX.1113.B.9 for the Mermentau and Vermilion Rivers is 150 nephelometric turbidity units (NTU), the major streams for the basins being evaluated. The State standards also establish turbidity guidelines of 25 NTU for scenic streams and 50 NTU for estuarine lakes. The evaluation was completed by comparing turbidity data available from the state’s fixed station monitoring network to the appropriate guideline.

The turbidity assessment procedure uses percentages of exceedances to evaluate if a stream is meeting its designated use with respect to the turbidity guidelines. See Table 3.2.1 above.

CHLORIDES, SULFATES, TOTAL DISSOLVED SOLIDS (TDS) - Louisiana waters listed for chlorides, sulfates and TDS were evaluated and compared to the numerical criteria listed by subsegment in LAC 33:IX.1123, Table 3. Numerical criteria for these parameters generally represent the arithmetic mean of existing data from the nearest sampling location plus three standard deviations.

TEMPERATURE - Louisiana waters listed for temperature were re-evaluated and compared to the numerical criteria listed by subsegment in LAC 33:IX.1123, Table 3. The temperature criteria enumerated in Table 3 in most cases represent maximum values obtained from existing data.

Please consult the following Web sites for further information on the State of Louisiana’s Water Quality Standards, 305(b) Report and water quality monitoring data:

Louisiana’s Water Quality Standards:

<http://www.deq.state.la.us/planning/regs/title33/33v09.pdf>

305 (b) Report for 2000: <http://www.deq.state.la.us/planning/305b/2000/index.htm>

LA’s Ambient Water Quality Data :

<http://www.deq.state.la.us/surveillance/wqdata/wqnsites.stm>

Delisting Commentary by Subsegment

LA subsegment **050101**, Mermentau River basin, Bayou Des Cannes **B** Headwaters to Mermentau River. Delist for turbidity based on two stations with 33 total data points. The

first station, period of record 1/10/95 to 5/11/98; with 4 of 21 data points exceeding 150 NTU on 3/9/98, 5/12/97, 5/9/95 and 1/10/95. For the second station, period of record 6/23/98 to 12/15/98; 0 of the 12 data points exceeded 150 NTU.

LA subsegment **050102**, Mermentau River basin, Bayou Joe Marcel **B** Headwaters to Bayou Des Cannes. Delist for turbidity based on one station with 12 data points none of which exceeded 150 NTU. Period of record: 6/23/98 to 12/8/98.

LA subsegment **050103** Mermentau River basin, Bayou Mallet **B** Headwaters to Bayou Des Cannes. Delist for turbidity based on one station with 12 data points none of with exceeded 150 NTU. Period of record: 12/15/98 to 6/23/98.

LA subsegment **050201** Mermentau River basin, Bayou Plaquemine Brule **B** Headwaters to Bayou Des Cannes. Delist for chlorides based on two stations with 0 of 41 and 0 of 12 data points exceeding the LA chloride standard of 90 mg/l and delist for sulfate based on two stations with 1 of 41 and 0 of 12 data points exceeding the sulfate standard of 30 mg/l. The one sulfate exceedance occurred on 4/3/95. Period of record for chloride and sulfate: 1/10/95 to 5/11/98.

LA subsegment **050301**, Mermentau River basin, Bayou Nezpique **B** Headwaters to Mermentau River. Delist for turbidity based on 3 stations with a total of 74 data points. First station, period of record 6/23/98 to 12/15/98, had no exceedances of 150 NTU of 12 data points. The second station, period of record 1/10/95 to 5/11/98; with 1 of 21 data points exceeding 150 NTU on 3/9/98. The third station, period of record 1/10/95 to 5/12/98; with 9 of 41 data points exceeding 150 NTU on 5/12/98, 4/14/98, 8/12/97, 5/13/97, 4/15/97, 4/9/96, 1/9/96, 5/9/95 and 4/4/95.

LA subsegment **050401**, Mermentau River basin, Mermentau River - Origin to Lake Arthur. Delist for turbidity based on two stations with a total of 71 data points. At the first station, period of record 1/10/95 to 10/12/99; 5 of 58 points exceeded 150 NTU on 4/13/99, 4/13/98, 4/14/97, 4/8/96 and 4/3/95. At the second station, period of record 6/17/98 to 12/2/98; 1 of 13 data points exceeded 150 NTU on 6/17/98.

LA subsegment **050402**, Mermentau River basin, Lake Arthur and Lower Mermentau River to Grand Lake. Delist for turbidity based on one station of 13 data points. Two data points exceeded the 150 NTU limit on 7/8/98 and 6/17/98 over a period of record of 12/2/98 to 6/17/98.

LA subsegment **050501**, Mermentau River basin, Bayou Queue de Tortue **B** headwaters to Mermentau. Delist chlorides and sulfates based on one station with 0 of 54 exceedances of the 90 mg/l and 30 mg/l standards. Period of record: 1/10/95 to 12/2/98. As stated in Troy Hill's declaration of March 23, 2000, the one additional waterbody/pollutant combination (050501 Bayou Queue de Tortue) Phosphorus was inadvertently left off Appendix E of the

February 25, 2000 modified court ordered list; however the supporting information and rationale found in Appendix E addresses the delisting of this waterbody/pollutant combination. Supporting information found in Appendix E is available on request.

LA subsegment **050602**, Mermentau River basin, Intracoastal Waterway **B** from the Calcasieu River basin. Delist turbidity based on 11 data points from a single station. Three data points exceeded 150 NTU on 8/4/98, 7/21/98 and 6/16/98 for the period of record from 12/1/98 to 6/16/98.

LA subsegment **050701**, Mermentau River basin, Grand Lake. Delist for turbidity based on two stations with a total of 24 data points. At the first station, period of record 6/17/98 to 12/2/98; 1 of 13 points exceeded 150 NTU on 6/17/98. At the second station, period of record 6/16/98 to 12/1/98; 0 of 11 data points exceeded the LA standard of 150 NTU.

LA subsegment **050702**, Mermentau River basin, Intracoastal Waterway- Mermentau River to Vermilion Locks. Delist for turbidity based on one station with 12 data points. Three data points of 12 exceeded the standard of 150 NTU on 8/12/98, 7/15/98 and 6/24/98 for the period of record 6/24/98 to 12/9/98.

LA subsegment **050703**, Mermentau River basin, White Lake. Delist sulfate based on one station with 5 of 32 exceedances of the 75 mg/l standard on 9/23/98, 9/9/98, 8/26/98, 6/24/98 and 9/9/97. Period of record: 1/9/95 to 12/9/98

LA subsegment **050901**, Mermentau River basin, Coastal Bays and Gulf waters to the State of Louisiana three-mile limit. Delist for turbidity based on one station; period of record 6/16/98 to 12/1/98. For this period of record 3 of 11 data points exceeded 150 NTU on 12/1/98, 10/20/98 and 9/23/98.

LA subsegment **060202**, Vermilion-Teche basin, Bayou Cocodrie from Cocodrie diversion canal to intersection of Bayou Bouef. Delist turbidity based on one station with 0 of 11 data points exceeding 150 NTU for the period of record of 6/23/98 to 12/9/98.

LA subsegment **060203**, Vermilion-Teche basin, Chicot Lake. Delist for turbidity based on one station with 0 of 29 data points exceeding the 150 NTU standard. Period of record 2/14/95 to 12/9/98.

LA subsegment **060204**, Vermilion-Teche basin, Bayou Courtableau **B** origin to West Atchafalaya Borrow Pit canal. Delist for turbidity based on two stations, period of records 6/24/98 to 12/9/98 for a total of 24 data points. Both stations of 12 data points each had no exceedances of the Louisiana standard of 150 NTU for turbidity for the period of record. Delist for chloride based on two stations for a total of 24 data points, period of records 6/24/98 to 12/9/98. Both stations of 12 data points each had no exceedances of the Louisiana standard of 40 mg/l for chloride.

LA subsegment **060205**, Vermilion-Teche basin, Bayou Tech **B** headwaters at Bayou Courtableau to I-10. Delist for turbidity based on two stations for a total of 45 data points. First station, period of record 6/17/98 to 12/2/98; with 0 of 12 data points exceeding the 150 NTU standard. Second station, period of record 1/10 /95 to 12/2/98; with 1 of 33 data points exceeding the 150 NTU standard on 1/12/98.

LA subsegment **060207**, Vermilion-Teche basin, Bayou des Glaises Diversion Channel/West Atchafalaya Borrow Pit canal **B** from Bayou des Glaises to Bayou Courtableau. Delist for turbidity based on one station, period of record 6/24/98 to 12/9/98 for a total of 12 data points. The station had no exceedances of the Louisiana standard of 150 NTU for turbidity.

LA subsegment **060208**, Vermilion-Teche basin, Bayou Boeuf **B** headwaters to Bayou Courtableau. Delist for turbidity based on six stations for a total of 76 data points. Station one, period of record 2/14/95 to 4/14/98; with 2 of 20 data points exceeding 150 NTU. Station two, period of record 11/19/96 to 10/18/99; with 0 of 13 data points exceeding 150 NTU. Station three, period of record 4/7/97 to 10/18/99; with 0 of 10 data points exceeding 150 NTU. Station four, period of record 4/7/97 to 10/18/99, with 0 of 10 data points exceeding 150 NTU. Station five, period of record 11/19/96 to 10/18/99; with 0 of 13 data points exceeding 150 NTU. Station six, period of record 4/7/97 to 10/18/99; with 0 of 10 data points exceeding 150 NTU. Delist for chloride and sulfate based on six stations for a total of 76 data points each for chloride and sulfate with 0 exceedances of the 45 mg/l chloride and 35 mg/l sulfate standards. Periods of record as above.

LA subsegment **060209**, Vermilion-Teche basin, Irish ditch/Big Bayou **B**unspecified ditch to Irish Ditch no.1 to Big Bayou to Irish Ditch no.2 to confluence with Bayou Rapides. Delist for TDS/salinity based on two stations for a total of 30 data points. Station one, period of record 4/7/97 to 10/18/99; with 2 of 10 data points exceeding the LA standard of 100 mg/l on 1/11/99 and 10/14/97. Station two, period of record 2/14/95 to 4/14/98; with 3 of 20 data points exceeding 100 mg/l on 4/8/96, 12/12/95 and 6/13/95. Delist chloride and sulfate based on two stations for a total of 30 data points each. For chloride 0 of 10 and 0 of 20 data points exceeded the standard of 45 mg/l. For sulfate 0 of 10 and 0 of 20 data points exceeded the standard of 35 mg/l.

LA subsegment **060210**, Vermilion-Teche basin, Bayou Carron, Delist for turbidity based on one station for a total of 12 data points. Station one, period of record 6/24/98 to 12/9/98; with 0 of 12 data points exceeding 150 NTU.

LA subsegment **060211**, Vermilion-Teche basin, West Atchafalaya Borrow Pit Canal **B** from Bayou Courtableau to Henderson, LA., includes Bayou Portage. Delist for turbidity based on one station for a total of 12 data points. Station one, period of record 6/16/98 to 12/2/98; with 1 of 12 data points exceeding 150 NTU. Delist chloride based on one station for a total of 12 data points. For chloride 0 of 12 data points exceeded the LA standard of 40 mg/l.

LA subsegment **060212**, Vermilion-Teche basin, Chatlin Lake Canal and Bayou DuLac **B** from Alexandria, La., to Bayou des Glaises Diversion canal (includes 0602 segment of Bayou Des Glaises). Delist for turbidity based on one station for a total of 12 data points. Station one, period of record 6/17/98 to 12/2/98; with 1 of 12 data points exceeding 150 NTU on 10/7/98.

LA subsegment **060401**, Vermilion-Teche basin, Bayou Teche **B** Keystone Locks and dam to Charenton Canal. Delist turbidity based on one station for a total of 63 data points. Station has a period of record of 1/9/95 to 10/12/99; with 7 of 63 exceedances of the Louisiana standard 150 NTU on 5/11/99, 1/12/99, 1/13/98, 12/8/97, 11/17/97, 5/14/96 and 3/12/96.

LA subsegment **060501**, Vermilion-Teche basin, Bayou Teche **B** Charenton Canal to Wax Lake outlet. Delist turbidity based on two stations for a total of 45 data points. First station, period of record 6/23/98 to 12/8/98; with 0 of 12 data points exceeding 150 NTU. Station two, period of record 1/9/95 to 12/8/98; with 1 of 33 data points exceeding the 150 NTU standard for turbidity on 11/17/97.

LA subsegment **060601**, Vermilion-Teche basin, Charenton Canal **B** from Charenton Floodgate to Intracoastal Waterway, includes Bayou Teche from Charenton to Baldwin. Delist turbidity based on one station for a total of 12 data points. Station one, for a period of record of 6/23/98 to 12/8/98; with 0 of 12 exceedances of the 150 NTU standard for turbidity.

LA subsegment **060701**, Vermilion-Teche basin, Tete Bayou, Delist for turbidity based on one station for a total of 12 data points. Station one, period of record 6/23/98 to 12/8/98; with 0 points of 12 exceeding 150 NTU.

LA subsegment **060702**, Vermilion-Teche basin, Lake Faussee point and Dauterive Lake. Delist for turbidity based on one station for a total of 32 data points. Station one, period of record 2/14/95 to 12/2/98, with 0 points of 32 exceeding 150 NTU.

LA subsegment **060703**, Vermilion-Teche River basin, Bayou Du Portage. Delist turbidity based on a total of 24 data points. First station, period of record 6/16/98 to 12/2/98; with 0 of 12 data points exceeding 150 NTU. Station two, period of record 6/17/98 to 12/2/98; with 1 of 12 data points exceeding the 150 NTU standard for turbidity on 10/7/98.

LA subsegment **060801**, Vermilion-Teche River basin. Vermilion River **B** headwaters at Bayou Fusilier Bourbeaux junction to New Flanders (Ambassador Caffery) Bridge, Hwy. 3073. Delist for turbidity based on three stations for a total of 43 data points. First station, period of record 6/17/98 to 12/2/98; with 0 of 11 data points exceeding 150 NTU. Station two, period of record 1/10/95 to 5/11/98; with 0 of 21 data points exceeding the 150 NTU standard for turbidity. Third station, period of record 6/24/98 to 12/15/98; with 0 of 11 data points exceeding the 150 NTU standard for turbidity. Delist for chloride based on three stations for a total of 43 data points; with 0 of 11 data points, 0 of 21 data points and 0 of 11 data points exceeding the 230 mg/l standard for chloride. Period of records as

above. Delist for Salinity/TDS based on one station, period of record 1/10/95 to 5/11/98, with 21 data points of which 1 data point exceeded the State standard of 350 mg/l on 9/11/95.

LA subsegment **060802**, Vermilion-Teche River basin. Vermilion River **B** headwaters at Bayou Fusilier Bourbeaux junction to New Flanders (Ambassador Caffery) Bridge, Hwy. 3073, to Intracoastal Waterway. Delist for turbidity based on three stations for a total of 110 data points. First station, period of record 6/17/98 to 11/17/98; with 0 of 11 data points exceeding 150 NTU. Station two, period of record 1/9/95 to 10/12/99; with 5 of 58 data points exceeding the 150 NTU standard for turbidity on 5/11/99, 1/13/98, 12/8/97, 5/13/97 and 2/13/95. Third station, period of record 1/10/95 to 5/11/98; with 0 of 41 data points exceeding the 150 NTU standard for turbidity. Delist Salinity/TDS for two stations for a total of 99 data points. First station, period of record 1/9/95 to 10/12/99; with 4 of 58 data points exceeding the 350 mg/l standard for TDS on 10/12/99, 8/12/97, 9/10/96 and 9/11/95. Second station, period of record 1/10/95 to 5/11/98; with 0 of 41 data points exceeding the 350 mg/l standard. Delist for chloride based on three stations for a total of 110 data points. . First station, period of record 6/17/98 to 11/17/98; with 0 of 11 data points exceeding 230 mg/l. Station two, period of record 1/9/95 to 10/12/99; with 2 of 58 data points exceeding the 230 mg/l standard on 9/10/96 and 9/11/95. Third station, period of record 1/10/95 to 5/11/98; with 0 of 41 data points exceeding the 230 mg/l standard for chloride. Delist for temperature based on two stations for a total of 116 data points. First station, period of record 1/9/95 to 5/9/00; with 0 of 64 data points exceeding the 32 degree standard. Second station, period of record 2/13/95 to 5/11/98, with 0 of 41 data points exceeding the 32 degree standard. Third station, period of record 6/17/98 to 11/17/98; with 0 of 11 data points exceeding the 32 degree standard.

LA subsegment **060803**, Vermilion-Teche River basin. Delist for turbidity based on one station for a total of 11 data points. First station, period of record 6/17/98 to 11/17/98; with 2 of 11 data points exceeding 150 NTU on 10/7/98 and 9/16/98.

LA subsegment **060804**, Vermilion-Teche River basin, Intracoastal Waterway **B** Vermilion Lock to Levee at segment 0611 and 0608 boundary (estuarine). Delist for turbidity based on one station for a total of 11 data points. First station, period of record 6/17/98 to 11/17/98; with 0 of 11 data points exceeding 150 NTU.

LA subsegment **060901**, Vermilion-Teche River basin, Bayou Petite Ande **B** Headwaters to Bayou Carlin (estuarine). Delist for turbidity based on one station for a total of 12 data points. First station, period of record 7/23/98 to 12/8/98; with 0 of 12 data points exceeding 150 NTU.

LA subsegment **060902**, Vermilion-Teche River basin, Bayou Carlin(Delcambre Canal) **B** Lake Peigneur to Bayou Petite Ande (estuarine). Delist for turbidity based on one station for a total of 33 data points. Station one, period of record 1/9/95 to 12/9/98; with 1 of 33 data points exceeding 150 NTU on 3/10/98.

LA subsegment **060903**, Vermilion-Teche River basin, Bayou Tigre **B** Headwaters to Bayou Petite Anse,). Delist for turbidity based on one station for a total of 12 data points. Station one, period of record 6/24/98 to 12/9/98; with 0 of 11 data points exceeding 150 NTU.

LA subsegment **060904**, Vermilion-Teche River basin, New Iberia Southern drainage canal **B** origin to Weeks Bay (estuarine). Delist for turbidity based on one station for a total of 11 data points. Station one, period of record 6/23/98 to 12/8/98; with 0 of 11 data points exceeding 150 NTU.

LA subsegment **060906**, Vermilion-Teche River basin, Intercoastal Waterway **B** New Iberia Southern Drainage Canal to Bayou Sale (estuarine). Delist for turbidity based on one station for a total of 11 data points. Station one, period of record 6/16/98 to 12/1/98; with 0 of 11 data points exceeding 150 NTU.

LA subsegment **060909**, Vermilion-Teche River basin. Lake Peigneur. Delist for turbidity based on one station for a total of 11 data points. Station one, period of record 6/24/98 to 12/9/98; with 0 of 12 data points exceeding 150 NTU.

LA subsegment **061102**, Vermilion-Teche River basin. Intracoastal Waterway **B** Levee at segment 0611 and 0609 boundary to New Iberia Southern Drainage Canal (estuarine). Delist for turbidity based on one station for a total of 12 data points. Station one, period of record 6/23/98 to 12/8/98; with 0 of 12 data points exceeding 150 NTU.